

Berkshire[®]

triticale

A high yielding grain-only triticale purpose-bred for feed qualities suited to the pork industry.

Triticale is a common and useful ingredient in pig diets in Australia. Triticale diets often outperform diets based upon other cereal grains, particularly for young pigs. The Pork Cooperative Research Centre (Pork CRC) is working to develop cereal grains to grow in pig-producing regions that have a high yield, cost-effective agronomy and high nutritive value for pigs.

Co-investment funding by the Pork CRC into The University of Sydney's triticale breeding program has resulted in the release of Berkshire.

Characteristics of Berkshire

- Equivalent yielding to current grain only varieties.
- Resistant to leaf rust, moderately resistant to stem rust and moderately resistant-moderately susceptible to Jackie strain of stripe rust (Table 1).
- Closely suited to the feed grain needs of the Australian pork industry.
- Suited as stockfeed for other livestock industries such as poultry, dairy and on-farm supplementary feeding of sheep and cattle.

- Higher energy content than many other varieties of triticale. The average digestible energy (DE) content of Berkshire is 14.5 MJ/kg compared to an average 13.7 MJ/kg for over 200 samples of other varieties and lines of triticale. This improvement of 0.8 MJ/kg DE has stimulated demand for Berkshire from the Australian pork industry.
- Berkshire is subject to an End Point Royalty. This income is reinvested into the program to develop even better varieties of triticale with improvements in feed quality, grain yield and agronomic characteristics, including rust resistance.



Plots of Berkshire triticale at the Henty Machinery Field Day trial site, 1 September 2009

Table 1 Varietal characteristics of Berkshire and other grain only triticale varieties

	Straw strength	Maturity	Stem rust	Leaf rust	Stripe rust	
					WA ^R	Jackie ^R
Berkshire[®]	good	quick/mid	MR	R	MR	MS
Bogong [®]	very good	quick	R	R	MR	MR-MS
Canobolas [®]	good	quick	R	R	MR	MS-S
Hawkeye [®]	good	mid	MR-R	R	MR	MR (MS) ^S
Jaywick [®]	good	quick/mid	MR-R	R	MR	MR
Tahara	mod	quick/mid	R	R	MR	MR
Tobruk	very good	quick	R	R	MR	MR-MS ^H

Disease resistance: S-susceptible; MS-moderately susceptible; MR-moderately resistant; R-resistant.

^H susceptible to head infection

^R stripe rust strain or pathotype

^S some plants have a higher response noted in brackets

Grain yield

Grain yield of Berkshire is equivalent to the best triticale varieties available. Predicted grain yield from long term NVT trials is presented for New South Wales in Table 2, Victoria in Table 3, and South Australia in Table 4.

Table 2 Predicted average yield in NSW, 2004-10

	Predicted grain yield ^Y (t/ha)		
	NE NSW	NW NSW	SE NSW
Berkshire[Ⓛ]	4.82 (6)	3.68 (4)	4.71 (14)
Bogong [Ⓛ]	5.24 (6)	3.96 (4)	5.03 (14)
Canobolas [Ⓛ]	4.89 (7)	3.66 (5)	4.79 (15)
Hawkeye [Ⓛ]	4.62 (7)	3.60 (5)	4.64 (17)
Jaywick [Ⓛ]	4.89 (7)	3.61 (5)	4.61 (17)
Tahara	4.23 (8)	3.32 (6)	4.12 (21)
Tobruk [Ⓛ]	4.55 (8)	3.61 (6)	4.48 (21)

^Y The number of experiments is shown in brackets. The more trials, the greater the reliability of the data.

Table 3 Predicted average yield in Victoria, 2004-10

Variety	Predicted grain yield ^Y (t/ha)		
	North east	South west	Mallee
Berkshire[Ⓛ]	2.93 (8)	4.38 (6)	2.59 (4)
Bogong [Ⓛ]	3.03 (8)	4.45 (8)	2.72 (7)
Canobolas [Ⓛ]	3.00 (8)	4.37 (8)	2.60 (7)
Hawkeye [Ⓛ]	2.85 (10)	4.33 (16)	2.58 (8)
Jaywick [Ⓛ]	2.84 (10)	4.28 (10)	2.53 (8)
Tahara	2.57 (12)	3.79 (20)	2.39 (10)
Tobruk [Ⓛ]	2.82 (10)	4.18 (22)	na

^Y The number of experiments is shown in brackets. The more trials, the greater the reliability of the data.

Table 4 Predicted average yield in SA, 2004-10

Variety	Predicted grain yield ^Y (t/ha)		
	South east	Upper Eyre Peninsula	Lower Eyre Peninsula
Berkshire[Ⓛ]	4.83 (3)	2.16 (4)	3.23 (4)
Bogong [Ⓛ]	5.13 (4)	2.40 (7)	3.52 (8)
Canobolas [Ⓛ]	4.70 (4)	2.23 (7)	3.23 (8)
Hawkeye [Ⓛ]	4.61 (5)	2.11 (9)	3.09 (10)
Jaywick [Ⓛ]	4.64 (5)	2.08 (9)	3.05 (10)
Tahara	4.17 (6)	2.04 (11)	2.82 (12)
Tobruk [Ⓛ]	4.79 (6)	2.08 (3)	2.92 (6)

^Y The number of experiments is shown in brackets. The more trials, the greater the reliability of the data.

Feed value of Berkshire for the pork and dairy industry

Triticale is a high value stock feed traditionally used on farm for sheep feed or by the dairy industry. In a new direction for plant breeding and triticale, Berkshire, has been specifically selected for its suitability as a stock feed for the pork industry.

Feeding trials are confirming the value of triticale, and in particular Berkshire in pig rations. In one trial conducted by Rivalea, effects of cereal grain on the growth performance of weaner pigs was not significant. However, at the end of the 40 day experiment, pigs fed the Berkshire triticale diet weighed 25.4 kg, compared to 24.7 kg with the mixed triticale diet and only 24.1 kg for the wheat diet.

The results were also encouraging in that the pigs fed a Berkshire triticale based diet tended to eat more feed compared to the wheat based and mixed variety triticale based diets. In addition, both triticale diets also tended towards better feed conversion efficiency than the wheat-based diet.

Growing Berkshire triticale

Berkshire should be sown in the main wheat sowing window during May until the first week of June. Seeding rate should target 120 plants per m² and be increased slightly as sowing date is delayed.

Berkshire should be managed very similarly to wheat with adequate fertiliser and effective weed control.

Full guidelines for growing triticale and the use of triticale as stockfeed are available (see below).

For further information see the website
www.waratahseeds.com.au
 or email info@waratahseeds.com.au
 or contact your regional Waratah member:

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